REMARKS

Prior to entry of the present Amendment, claims 1-22 were pending in the present application. Claims 1, 3, 6, 9, 12, 14, 16, 17 and 20 are amended above. New claims 23-46 are added above. No new matter is added by the new claims and the claim amendments. Entry is respectfully requested.

An English-language translation of Harras (DE 196 02 804 A1) is submitted for consideration by the Patent Office and is cited in an Information Disclosure Statement filed contemporaneously herewith. Harras (DE 196 02 804 A1) was originally cited in the present application in an Information Disclosure Statement dated June 2, 2004.

Claims 3, 6, 14, 16 and 17 stand rejected under 37 U.S.C. 112, second paragraph. The claims are amended above to correct the antecedent basis issues. Entry of the amendments and removal of the rejections are respectfully requested.

Claims 1-22 stand rejected under 35 U.S.C. 102(e) as being anticipated by Lawandy, *et al.* (U.S. Patent Number 6,338,933). Reconsideration of the rejection and allowance of claims 1-22 are respectfully requested.

In the present invention as claimed in amended independent claim 1, a method for modifying an optical medium, the medium having a plurality of operational characteristics, each operational characteristic having a predefined limit includes selecting a region of the medium to be modified. The method further includes modifying the medium in the region to have a first actual characteristic that is at or near a predefined limit of a first of the plurality of operational characteristics prior to a read operation of the medium and modifying the medium in the region to have a second actual characteristic that is at or near a predefined limit of a second of the plurality of operational characteristics prior to a read operation of the medium. During a read operation of data stored in the modified region, the read operation is altered in the modified region as a result of the modifications such that the first and second actual characteristics of the modified medium cause a slow-down in the read operation when the modified region is

read. The modified region maintains its optical characteristics following irradiation of the modified region during the read operation.

In the present invention as claimed in amended independent claim 12, an optical medium has a plurality of operational characteristics, each operational characteristic having a predefined limit. The optical medium is modified in a modified region to have a first actual characteristic at or near a predefined limit of a first of the plurality of operational characteristics prior to a read operation and the optical medium is modified in the modified region to have a second actual characteristic at or near a predefined limit of a second of the plurality of operational characteristics prior to a read operation. During a read operation of data stored in the modified region, the read operation is altered in the modified region as a result of the modifications such that the first and second actual characteristics of the modified medium cause a slow-down in the read operation when the modified region is read. The modified region maintains its optical characteristics following irradiation of the modified region during the read operation.

Thus, in the invention as claimed in claim 1 and in the invention as claimed in claim 12, the "modified region" is formed in the optical medium "to have a first actual characteristic at or near a predefined limit of a first of a plurality of operational characteristics prior to a read operation of the medium" and "to have a second actual characteristic at or near a predefined limit of a second of the plurality of operational characteristics prior to a read operation of the medium". The modified region is modified so that, during a read operation in the modified region, the "read operation is altered", such that "the first and second actual characteristics of the modified medium cause a slow-down in the read operation". The modified region has associated with it certain "optical characteristics" following its formation, that are "maintain(ed)", and are therefore stable. This stability is maintained, even "following irradiation of the modified region" during a subsequent "read operation".

Lawandy, *et al.* is directed to a system and method in which an optical medium is rendered unreadable following a first read, or following a fixed number of reads, of the

medium. Lawandy, *et al.*, at column 6, lines 29-57, discloses the construction of data structures 23 including the pits 27 and lands 25. During the read operation, the introduction of incident laser energy causes a permanent modification of the optical characteristics of the medium that affects the readability of the underlying data structures during subsequent read operations. In one embodiment, shown and described in connection with FIGs. 3A and 3B, the optical medium is provided with a photopolymer layer 200 that expands upon the introduction of laser energy during a read of the device. Expansion of the polymer as a result of the irradiation (see deformation 210 of FIG. 3B of Lawandy, *et al.*) permanently affects the readability of the underlying data structures resident in the pits and lands 25, 27 of the medium (see Lawandy, *et al.*, column 8, lines 7-16 and column 8, lines 64-65). Polymer expansion in this manner also has a permanent effect on the surface topology of the medium, which can detrimentally affect the tracking operation during a read of the medium. (see Lawandy, *et al.*, FIG. 8 and column 9, lines 26-44). In a second embodiment, Lawandy, *et al.* teaches the use of an oxygen-loaded photosensitzer layer 300, which, upon the incidence of laser energy during a read operation, releases oxygen that permanently oxidizes, and therefore permanently affects the reflectivity of, and therefore the readability of, the reflective data layer 22' (see Lawandy, *et al.*, FIGs. 4A and 4B, and the corresponding discussion at column 9, line 45 - column 10, line 25). In a third embodiment, Lawandy, *et al.* teaches the use of an uncured polymer layer 402B that is adjacent the reflective layer 22' (see Lawandy, *et al.*, FIG. 5A, and corresponding discussion at page 10, lines 26-53). Upon exposure to laser energy during a read operation, the polymer layer is cured and oxygen is released that permanently oxidizes, and therefore permanently affects the reflectivity of, and therefore the readability of, the reflective data layer 22' (see Lawandy, *et al.*, FIG. 5A, and corresponding discussion at page 10, lines 26-53). In this manner, Lawandy, *et al.* provides methods and systems for forming data structures and rendering a disk unreadable following a first read, or following a predetermined number of reads, of the data contained on the disk.

In view of the above, it is submitted that Lawandy, *et al.* fails to teach or suggest the present invention as claimed in independent claims 1 and 12. In particular, Lawandy,

et al. fails to teach or suggest "modifying the medium"... "to have a first actual characteristic that is at or near a predefined limit of a first of the plurality of operation characteristics prior to a reading operation of the medium" and "to have a second actual characteristic at or near a predefined limit of a second of the plurality of operational characteristics prior to a reading operation", "such that during a read operation of data stored in the modified region, the read operation is altered...such that the first and second actual characteristics of the modified medium cause a slow-down in the read operation", as claimed in claims 1 and 12 (emphasis added). Instead, Lawandy, *et al.* teaches distortion of the surface profile of the medium following an initial read of the disk as a result of irradiation of the disk. In addition, while Lawandy, *et al.* discloses the ranges of the width and length of the pits 27 in the formation of data structures 23. The pits 27 and lands 25 are merely forming the data structures such that the medium can be read. Lawandy, *et al.* in no way teaches or suggests forming the pits and lands at or near the limits in order to cause a slow-down of the read operation. It is further submitted that Lawandy, *et al.* fails to teach or suggest "the distorted region maintaining its optical characteristics following irradiation of the distorted region during the reading operation", as claimed in claims 1 and 29. Instead, in Lawandy, *et al.*, the optical characteristics of the medium permanently change as a result of the irradiation.

Accordingly reconsideration and removal of the rejection of independent claims 1 and 12 as being anticipated by Lawandy, *et al.*, are respectfully requested. With regard to dependent claims 2-11 and 13-22, it follows that these claims should inherit the allowability of the independent claim from which they depend.

With regard to new claims 23-31, 32-40, 41-43 and 44-46, it is submitted that Lawandy, *et al.*, whether taken alone, or in combination with the other cited references, fails to teach or suggest the combination of claimed limitations.

Closing Remarks

It is submitted that all claims are in condition for allowance, and such allowance is respectfully requested. If prosecution of the application can be expedited by a telephone conference, the Examiner is invited to call the undersigned at the number given below.

Authorization is hereby given to charge Deposit Account No. 501798 for any fees which may be due or to credit any overpayment.

Respectfully submitted,

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